

U.S. Patent Application Serial No. 09/963,674
Amendment filed **December 16, 2004**
Reply to OA dated September 17, 2004

REMARKS

Claims 1, 3-10, and 13-15 are pending in this application. Claims 1, 3 and 5 have been amended herein, and claim 2 has been canceled without prejudice or disclaimer. New claim 15 has also been added.

Claim 1 has been amended to incorporate the limitation of claim 2, which has been correspondingly canceled. Claim 3 has been amended to depend from claim 1.

Claims 1 and 5 have also been amended to recite that “said particles of said magnet powder are prepared by crushing an alloy magnet powder in an organic solvent having added thereto phosphoric acid”. Support for this amendment may be found in the specification on page 8, lines 7-14, in which it is disclosed that the method may involve “[crushing] the iron-based alloy magnet powder containing a rare-earth element in an organic solvent in the presence of phosphoric acid,” and page 9, last paragraph, in which it is disclosed that the phosphoric acid “may be added to the organic solvent in which the alloy magnet powder is crushed”

Support for new claim 15 may be found in the specification on page 8, lines 3-5.

Claims 1-10, 13 and 14 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 6,638,367 B2. (Office action paragraph 2)

The rejection is obviated by the filing of a terminal disclaimer over U.S. Patent No. 6,638,367. The terminal disclaimer papers are filed concurrently with this Amendment.

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Claims 1-10, 13 and 14 are rejected under 35 U.S.C. §103(a) as being unpatentable over Honda et al. (US Patent 4,668,283) in view of Furuya et al. (US Patent 5,393,445). (Office action paragraph 4)

The rejection is overcome by the amendment to the claims. Independent claims 1 and 5 have been amended to recite that "said particles of said magnet powder are prepared by crushing an alloy magnet powder in an organic solvent having added thereto phosphoric acid."

The crushing of an alloy magnet powder **in a solution containing phosphoric acid** (i.e., crushing **during (not prior to)** phosphoric acid treatment) is extremely important in the present invention to achieve uniform coating with the phosphate film. That is, this product-by-process limitation has a specific effect on the structure of the claimed powder and composition.

For example, in Comparative Example 3, the isopropanol/phosphoric acid solution is applied **after crushing**. Example 1 of Honda et al., is similar in this regard--a $\text{Sm}_2\text{Co}_{17}$ magnet powder was dipped in a 0.5 wt% aqueous solution of phosphoric acid (i.e., an alloy magnet powder is crushed **prior to** addition of the phosphoric acid solution) to form a phosphate film--although the phosphoric acid solution in Honda does not have an organic solvent.

In the magnet powder obtained in Comparative Example 3, although the film thickness is 20 nm, the ratio of the surface thereof coated with the phosphate film is only 75 %. As a result, the coercive force of the magnet powder is lowered to 5.20 kOe after 24 hours (see the last paragraph on page 20, and the Table on page 19, of the present specification).

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On the other hand, in the magnet powder obtained in Example 4 of the present application (in which the alloy magnet powder is **crushed in** an isopropanol solution containing phosphoric acid), the film thickness is 18 nm and substantially all of the surface is coated with the phosphate film. As a result, the coercive force of the magnet powder is kept at 10.45 kOe even after 24 hours (see the last paragraph on page 20, and the Table on page 19, of the present specification).

As apparent from the above, the crushing **during (not prior to)** phosphoric acid treatment has a specific effect on the resultant structure in the present invention, which Applicant submits would not be found in the prior art. This limitation on the manner of crushing is not disclosed or suggested in the references. Moreover, the unexpected effect on product performance resulting from this limitation is not recognized at all in the references. Therefore, the present invention is not obvious over Honda et al. and Furuya et al., taken separately or in combination.

In view of the aforementioned amendments and accompanying remarks, the claims, as amended, are in condition for allowance, which action, at an early date, is requested.


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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP


Daniel A. Geselowitz, Ph.D.
Agent for Applicant
Reg. No. 42,573

DAG/plb:mla
Atty. Docket No. **011020**
Suite 1000
1725 K Street, N.W.
Washington, D.C. 20006
(202) 659-2930



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